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**The interplay between objective and subjective ethno-cultural diversity in predicting  
intergroup relations**

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## **Abstract**

This nation-wide probability sample survey study among Finnish majority group members ( $N = 335$ ) focused on the interactive effects of objective and subjective ethno-cultural diversity on three indicators of intergroup relations: outgroup attitudes, perceived group and personal discrimination, and outgroup trust. Complementing previous research that has mostly examined a linear relationship between cultural diversity and intergroup relations, special attention was given to moderate diversity contexts, which are claimed to pose different challenges to intergroup dynamics than high and low diversity contexts. It was hypothesized that majority group members who live in contexts characterized by moderate levels of objective diversity but subjectively perceive high levels of diversity will report more negative outgroup attitudes, lower levels of outgroup trust and higher levels of discrimination, as compared to those living in low- or high-diversity contexts. The hypothesis was confirmed for perceived group discrimination and outgroup trust. The results highlight the need to acknowledge possible non-linear relationships between diversity and intergroup relations.

Key words: objective diversity, subjective diversity, outgroup attitudes, perceived discrimination, outgroup trust

# **The interplay between objective and subjective ethno-cultural diversity in predicting intergroup relations**

## **Introduction**

Social changes, especially changes in social norms and values prevailing in the society, require individuals to adjust to the new situations (e.g. Nelson, Adger, & Brown, 2007). One of the major social changes experienced by Europeans today is increasing immigration. The reactions are often less than optimal: research has repeatedly reported discrimination of and hostile attitudes towards immigrants moving to and living in receiving European societies (e.g., Coenders, Lubbers, and Scheepers 2005; EU-MIDIS 2012). Inevitably, also a key line of previous social psychological research has focused on the relationship between the size of immigrant population and anti-immigrant sentiment (e.g., Coenders, Gijsberts, and Scheepers 2004; Semyonov, Raijman, and Gorofzeisky 2006, 2008; Schlueter and Scheepers, 2010; Scheepers, Gijsberts, & Coenders 2002). According to different theories on intergroup threats, competition and conflict (e.g. Blalock 1967; Schlueter and Scheepers 2010; Schneider 2008), perceiving newcomers as competitors over scarce resources makes majority group members perceive immigrants as a threat. Indeed, larger outgroup size has repeatedly been found to be associated with higher levels of anti-immigrant sentiment, mediated by high levels of perceived outgroup threat (Blumer 1958; Blalock 1967; McLaren and Johnson 2007; Schlueter and Scheepers 2010). However, from research on intergroup contact, we know that diverse contexts may also offer opportunities for positive intergroup contact, leading to more positive intergroup relations (for discussion, see e.g. Hewstone 2015),

In this study on the social adaptation of national majority group members to increasing immigration to Finland, we argue that the relationship between ethno-cultural diversity and intergroup relations is far from being simple. For example, with a large European Social Survey sample, Rustenbach (2010) failed to find effects of the regional or national number of immigrants on anti-immigrant attitudes. This suggests that immigrant density does not inevitably lead to intergroup discord. In fact, living in a context that hosts larger immigrant groups provides people with more opportunities for intergroup contact (Schneider 2008; Wagner et al. 2006), which is known to effectively reduce negative outgroup attitudes (Allport 1954; for meta-analysis, see the Pettigrew and Tropp 2006).

Moreover, when talking about the effects of ethno-cultural diversity on intergroup relations, it is important to keep in mind that absolute, objective indicators of diversity are not the

only factors affecting people's attitudes and threat perceptions. People get information and cues about the degree of cultural diversity from different sources, including those that overestimate migration rates or represent immigration as threatening and dangerous (Fasel, Green, and Sarrasin 2013). The lack or selectivity of factual information on diversity gives more space for subjective understandings, and consequently, an individual's subjective perception of cultural diversity may differ from actual numerical diversity. Indeed, already more than ten years ago, Semyonov and colleagues (2004) compared the effects of objective and subjective diversity on anti-immigrant attitudes using German social survey data. The results showed that negative attitudes were predicted by subjectively perceived diversity and not by the actual number of immigrants in society. Also in more recent survey studies conducted in Europe, higher levels of subjective diversity have been found to have a greater influence on negative outgroup attitudes than objective diversity in context (Christ et al. 2014; Hooghe and de Vroome 2015; Schlueter and Scheepers 2010). One reason for these results is that subjective perceptions of diversity are influenced by different, and sometimes exaggerated, cues about the levels of objective diversity (e.g. Fasel, Green and Sarrasin 2013; Semyonov et al. 2004). People have also been found to inaccurately estimate the extent of cultural diversity in their environment (Semyonov, Raijman and Gorofzeisky 2008), and thus might give more value to their subjective estimations when evaluating intergroup relations.

To sum up, there is a clear need to simultaneously acknowledge the effects of both objective and subjective diversity on intergroup relations. It should also be considered that these two interact: as recently pointed out by Hooghe and de Vroome (2015) as well as by Schmid et al (2015), subjective and objective diversity may also jointly affect intergroup relations. This study on intergroup relations between majority Finns and Russian immigrants builds on existing research concerning the effects of perceived/subjective and actual/objective cultural diversity on intergroup relations (Hooghe and de Vroome 2015; Schlueter and Scheepers 2010; Semyonov, Raijman, Tov, and Schmidt 2004) and consequences of subjective uncertainty (Hogg 2000) within an ecological framework of social adaptation. As explained in more detail below, we argue that in order to better understand social adaptation to increasing diversity, we need to 1) focus on the inter-relationship between objective diversity in the distal context and subjective diversity in the proximal context, 2) acknowledge the special characteristics of contexts with moderate levels of objective diversity, and 3) examine reactions to diversity with a variety of indicators of intergroup relations.

### ***Ecological framework of social adaptation to increasing diversity***

Social ecological frameworks that focus on the interconnections between different personal, interpersonal and environmental factors are often used in social and life sciences in explaining human behavior and development (see, e.g. McLaren and Hawe 2005). For example, according to the Ecological Framework for Human Development by Bronfenbrenner (1977), it is essential to interpret human behavior and development by taking into account the whole ecological system: the individual (personal characteristics and biological aspects), their microsystem (family, friends, peers), the mesosystem (the connection provider between the structures of microsystem), the exosystem (larger social system), and the macrosystem (cultural ideologies and attitudes). Moreover, it is important to note that the influences of different contexts depend on how proximal or distal those contexts are to the individual. As pointed out by Sameroff (1975), proximal influences correspond to interactions that can directly influence the individual, such as interactions with family, friends and people living in the same neighborhood. The neighborhood-level approach was also taken in recent studies by Stolle et al. (2013) and Schmid, Hewstone, & Al Ramiah (2015). While discussing these studies, Hewstone (2015) points out “neighborhoods are more meaningful than using larger areas, since it is in such smaller community contexts that individuals negotiate their everyday relations” (p. 421). Distal influences, in turn, are more indirect, such as societal or institutional influences. Although Sameroff’s (1975) model was originally built as a developmental model for early childhood, it quickly gained attention from other research areas such as mental and public health, and the terminology of “proximal vs. distal”, “biological vs. societal”, and “near vs. distant” factors started to be used in scientific debates more widely.

In this study, we utilize this broad ecological framework and acknowledge the interrelationship between proximal and distal influences. We examine the joint effects of diversity in the neighborhood (i.e. proximal context) and diversity in the larger administrative region (i.e. distal context). While social ecological frameworks are popular among social and behavioral sciences, they have not been widely used in the area of intergroup relations. However, some previous studies have recognized the different effects of proximal and distal factors, albeit with somewhat different conceptualizations. For example, Schmid, Al Ramiah and Hewstone (2014) noted in their recent study on neighborhood diversity and outgroup trust that psychologists often focus on the individual level processes, while contextual-level factors and their interplay with individual-level factors are also very important. In their study, Schmid and colleagues (2014) described diversity as “macro-

level phenomenon characterizing a given spatial unit (i.e., the aggregate-level proportional representation of different subpopulations in a given spatial unit, such as neighborhoods or cities)” and argued that the different effects of neighborhood- and country-level diversity may have led to the mixed results yielded in previous studies. Focusing solely on diversity within the neighborhood, they found that, especially for majority group members, neighborhood diversity had negative effects on outgroup trust. However, as already noted, more proximal and distal contexts exist simultaneously, and this is why also reactions to them must be simultaneously examined.

Moreover, proximal and distal diversity cannot be properly assessed using the same measures, as the same distal event or reality can be differently interpreted by different individuals depending on their personal experience. This disparity has been acknowledged in previous research on subjective vs. objective diversity (e.g. Hooghe and de Vroome 2015). Thus, rather than testing whether distal/objective or proximal/subjective diversity is more influential, this study focuses on the interaction effect of *objective diversity in the region* (distal effect) and *subjective diversity in the neighbourhood* (proximal effect) on perceived intergroup relations. Next, we explain why this is done with a special focus on regions with moderate levels of objective diversity.

### ***Characteristics of moderate objective diversity contexts***

To our knowledge, Hooghe and de Vroome (2015) were the first researchers to recognize the joint effect of objective and subjective cultural diversity on outgroup attitudes. In their recent study, they expected that higher objective diversity and higher subjective diversity together would lead to more negative attitudes toward immigrants. However, again (cf. Christ et al. 2014; Hooghe and de Vroome 2015; Schlueter and Scheepers 2010; Semyonov et al. 2004), only subjective—not objective—diversity was associated with anti-immigrant sentiment, and there was no evidence of an interaction effect. One possible explanation for why no such interaction was found could be due to their study’s focus on a linear relationship between diversity and intergroup relations. Although their study treated a complete Flemish region of Belgium as a high cultural diversity context, the researchers recognized that in the region, there were big cities with high levels of immigrant as well as more homogeneous suburbs with somewhat lower levels of immigrants. Therefore, we think that focusing solely on a linear relationship may have prevented Hooghe and de

Vroome (2015) from showing that objective diversity may affect perceived intergroup relations, especially in contexts characterized by a moderate level of objective diversity.

Due to the fact that there is relatively little study of the effect of diversity in areas characterized by increasing diversity (Hewstone 2015), we need to derive our predictions from various lines of theorization. In social psychology, already Allport (1954) suggested that there would be more negative outgroup attitudes in contexts with *large* or *increasing* numbers of immigrants. Big cities and metropolitan areas are typically the areas that host the highest proportion of immigrants in a country. These contexts have also been destinations of migrants for a longer time. In these kind of areas, the effects of high diversity may be quite different from other contexts, where people are not as used to being surrounded by different ethno-cultural groups (for a similar point about settler and non-settler societies in acculturation psychology, see Berry, Phinney, Sam, and Vedder 2006). While the effects of outgroup size on perceived intergroup relations may not be that visible in contexts that have been characterized by high levels of diversity for a long time, we may see reflections of the rise in immigrant numbers in contexts characterized by moderate levels of cultural diversity. Schneider (2008) found support for this idea in her multi-level study in 21 European countries and Israel, in which she examined the relationship between the proportion of non-Western immigrants and threats perceived by national majority group members. The results demonstrated a curvilinear relationship: increasing immigrant proportion was associated with heightened threat only until a certain point, after which increasing numbers were linked to decrements in perceived threats. Hence, it is essential to disentangle numerical knowledge from qualitative differences between contexts that are representing different degrees of diversity in order to better understand the context-specificity of intergroup dynamics. This study suggests that there is clear need to specifically focus on moderate diversity contexts.

Even though most social psychological research on intergroup relations have focused on a linear relationship between diversity and intergroup relations, the special characteristics of moderate diversity contexts have been acknowledged for long in organizational psychology. Blau (1977) suggested in his theory of heterogeneity that companies with different levels of cultural diversity experience dissimilar dynamics and organizational outcomes. Based on Blau's (1977) research and premises of the social identity approach (Tajfel and Turner 1985), Richard, Barnett, Dwyer, and Chadwick (2004) tested the idea that cultural diversity in management would have a U-shaped curvilinear relationship with group performance. They argued that when heterogeneity in



management groups reaches moderate levels, in-group favouritism and/or outgroup discrimination are especially likely to occur. In contrast, and in line with Blau's (1977) theorization, high levels of diversity may weaken intergroup barriers due to increased diffusion of people into different categories (see also Earley and Mosakowski 2000). The results of Richard and colleagues (2004) supported these assumptions, but only in companies with highly innovative strategic postures and not in high risk-taking contexts. Nevertheless, their study was an important starting point for research on non-linear relationships between cultural diversity and intergroup relations. Also, it should be noted that while the study by Richard and colleagues (2004) did not test for interaction between objective and subjective diversity, their different results for different companies suggest that the ramifications of moderate cultural diversity might be more complex than has been previously acknowledged.

Finally, based on cognitive psychological research, we have a reason to believe that biased perception leads to biased judgement (see e.g. Tobena, Marks, and Dar 1999), and the risk for these biases is the greatest in contexts where cues are ambiguous. Especially in contexts characterized by moderate diversity, there are no clear indicators that would help in making accurate judgments about the actual degree of diversity or about its consequences for oneself and one's in-group. Instead, in these contexts, cues about the actual number of immigrants are more ambiguous, as are the cues about the consequences of diversity for the majority group (cf. Fasel 2013; Sarasin 2013). Ambiguity, in turn, is found to lead to in-group bias motivated by uncertainty avoidance (Grieve and Hogg 1999, experiment 2). As pointed out by Hogg (2000, 248), "people need to reduce uncertainty about who they are, what they should think, feel and do, and how they should interrelate with others." When the ambiguous context generates subjective uncertainty regarding issues relevant for the well-being of oneself and one's in-group, uncertainty is heightened – and so is in-group bias and outgroup negativity (Hogg 2000). Thus, based on previous theorizations and research discussed above, we expect to see the most negative perceptions of intergroup relations when objective diversity in the region is moderate and subjective diversity in the neighbourhood is high.

### ***Indicators of Intergroup Relations***

As regards the dependent variables of this study, we acknowledge the need to focus not only on often studied outgroup attitudes (e.g. Coenders et al. 2004; Semyonov et al. 2006), but

also other important indicators of perceived intergroup relations, such as outgroup trust and perceived personal and group discrimination. Outgroup trust – the belief in that outgroup members would not harm oneself or one’s in-group even if they had the chance (e.g., Schmid et al. 2014; Pettigrew, Tropp, Wagner and Christ 2011) is also related to the notion of social well-being. According to Keyes (1998), social well-being differs from psychological well-being in that it consists of people’s positive experiences within their communities, or their in-groups, in general. According to NEF (New Economics Foundation, 2009), social well-being is often measured through supportive relationships, trust and belonging. As a “social glue” of communities (Schmid, Al Ramiah and Hewstone, 2015; Uslaner 2011) trust is important not only as an indicator of the degree of intergroup harmony/discord, but also because it is considered as a key component of social capital. Putnam (2007, p. 137) describes social capital as “social networks and the associated norms of reciprocity and trustworthiness” and has warned that at least in the short term, ethnic diversity and immigration may reduce social capital and trust towards both out- and in-group members.

Increasing immigration may not only create a psychological discomfort related to the sense of insecurity and distrust among majority group members, but also be accompanied by actual experiences of negative intergroup interactions reflected in perceived discrimination. In research on cultural diversity and intergroup relations, the focus is typically on the perspective of minority group members: their integration to society and their experiences of negative and unfair treatment (see, e.g. Lucassen 2005). However, also majority group members may be subjected to experiences of negative contact (e.g. Barlow et al. 2012; Vezzali, Andrighetto, Bernardo, Nadi and Bergamini 2016), exclusion (e.g. Plaut, Garnett, Buffardi, and Sanchez-Burks 2011) and discrimination (e.g. Verkuyten 2002). The meaning and consequences of perceived discrimination depend on the in-group’s position in the social hierarchy, and discrimination is found to be especially harmful for members of disadvantaged groups (Schmitt and Branscombe 2002). Nevertheless, both minority and majority group members have concerns and challenges with which they must contend in intergroup encounters (Tropp 2006). This is why we, in the present study, also focus on the relatively rarely studied perceptions of group and individual-level discrimination among majority group members. Using these two measures of perceived discrimination is important: Other in-group members are typically seen to suffer from discrimination more than oneself (see, e.g., Taylor et al. 1990), and also this group-level discrimination negatively affects the individual (Schmitt et al. 2014).

## *Societal context and hypothesis of the study*

Until the last two decades, immigration to Finland was limited. Since then, immigration has been increasing, with currently 5.3 per cent of the total population having foreign descent (Statistics Finland, 2014). The biggest immigrant group in the country is the Russian-speaking minority: almost one-quarter of those who have a native tongue other than Finnish, Swedish or Sami, speak Russian (Statistics Finland, 2014). The wars between Soviet Union and Finland during the World War II have cast a shadow on intergroup relations between Russians and Finns (see, e.g. Mähönen, Brylka, and Jasinskaja-Lahti 2014). Although the Russian-speaking minority has been reported to be in a better position as compared to some other immigrant groups living in Finland (Jasinskaja-Lahti, Liebkind, and Perhoniemi 2006), they are known to face high levels of prejudice and discrimination. For example, a field experiment by Larja and colleagues (2012) showed that it is more than twice as hard to get an invitation for a job interview as a candidate with a Russian name compared to those with a Finnish name but an identical CV. Thus, examining the effects of cultural diversity on intergroup relations between majority Finns is a timely topic. Finland also serves as a suitable context to study the effects of subjective diversity in low, moderate and high objective diversity contexts, as its different administrative regions differ substantially regarding the size of immigrant population and the time period in which immigration has become a part of people's daily lives (see Methods).

We hypothesize that objective diversity in the region and subjective diversity in the neighbourhood have a joint effect on perceived intergroup relations: Finnish majority group members who live in regions characterized by moderate levels of objective diversity but who subjectively perceive high levels of diversity in their neighbourhood, perceive intergroup relations most negatively compared to those living in high or low objective diversity contexts. More specifically, we expect them to report most negative outgroup attitudes towards Russian immigrants and lowest levels of outgroup trust, and perceive highest levels of group and personal discrimination. When testing this hypothesis, we control for the effects of age, gender, and years of education. As stressed by Hewstone (2015), the effects of diversity on intergroup relations cannot be studied without taking into account the effects of intergroup contact. Diversity is associated with increased opportunities for contact (Schneider 2008) leading to less threat perceptions (e.g. Riek, Mania, and Gaertner 2006), more positive outgroup attitudes (e.g. Pettigrew and Tropp 2006) as well as higher outgroup trust (Tam et al. 2009). Thus, in this study, we also control for the effects of the frequency of intergroup contact.

## Method

### *Context and data*

The data for the current study comes from the Finnish data of Mutual Intercultural Relations in Plural Societies (MIRIPS) project (Berry 2012). The MIRIPS-FI project was conducted as nation-wide postal survey in 2012 among the Finnish majority group (i.e. Finnish-speakers who were born and currently residing in Finland) and Russian-speaking immigrants living in Finland. This study only utilizes data on majority group members.

The data was collected from all six administrative regions of mainland Finland: Southern Finland, Southwestern Finland, Western and Inland Finland, Eastern Finland, Northern Finland, and Lapland. Because of its autonomous status and Swedish-speaking majority population, Åland was left out from the sampling. The contact information of all participants was provided by the Finnish National Population Register Centre, and participation was voluntary and anonymous. In total, 335 Finnish participants (57% females, mean age 45.87) who self-reported their ethnicity as Finns took part in the study. The response rate was 34 per cent, which can be considered to be less than optimal, but it is typical of survey studies with representative samples conducted in Finland. The final sample of the present study was regionally representative, but not representative in terms of gender and age (mean age of non-respondents = 41.1 years, SD = 13.4).

### *Measures*

*Objective Cultural Diversity (OD)* The data was clustered into three regional diversity contexts based on the population size and the ratio of immigrants to the whole population in each regional state administrative agency. The Southern Finland region (including the capital city, Helsinki) represented the high OD context (n = 137, 5.7% immigrants, according to Statistics Finland 2014). The Southwestern Finland, Western and Inland Finland regions together formed the moderate OD context (n = 128, 2.8% immigrants, according to Statistics Finland 2014), and Eastern and Northern Finland with Lapland represented the low OD context (n = 70, 1.8% immigrants, according to Statistics Finland 2014). In administrative regions that were grouped into high OD context, there are currently more foreigners residing, and there have also been more foreigners residing for a longer period of time (Statistics Finland, 2015). In regions that comprise the moderate OD context of this

study, the number of foreigners as well as the percentage increase of foreign population is lower than in the high OD context, and higher than in the low OD context. In 2015, foreigner population of high OD context was 8.6 times bigger than in 1990, when immigration to Finland started to increase. In comparison, in moderate OD context foreigner population was 7.1 times bigger and in low OD context 6.5 times bigger in 2015 than in 1990. Only in the past 5 years, the size of foreign population in moderate and low OD contexts has started to grow almost as rapidly as in high OD context: thus, the differences between regions are still substantial. Variance analysis showed that all three OD contexts differed statistically significantly in their numbers of foreign residents ( $F(2, 331) = 16471.508, p = .000$ ). The OD contexts were coded as high = 1, moderate = 2, and low = 3.

*Subjective Cultural Diversity (SD)* was measured with the question of “According to your evaluation how many Russian-speaking immigrants are in your neighbourhood?” Participants ranked their evaluation on a scale of 0 = *none*, 1 = *few*, 2 = *some*, 3 = *many*.

*Outgroup Attitudes* were measured with an eight-item scale previously used in the same intergroup context by Jasinskaja-Lahti and colleagues (2009) as well as Brylka and colleagues (2015). The items included "I would accept with pleasure a Russian immigrant as a friend", "In my opinion, Russian immigrants can be as nice as native Finns" and "I could not imagine (if I were single) that I would date a Russian immigrant" (reversed). Higher scores indicated more positive attitudes towards Russian-speaking immigrants. Participants rated each item on a 5-point scale from 1 = *completely different view* to 5 = *completely agree* ( $\alpha = .92$ ).

*Outgroup Trust* was measured with a scale adapted from Hewstone and colleagues (2007), Tam and colleagues (2006), and Paolini and colleagues (2007). The items included: “In my opinion most of the Russian immigrants are trustworthy” and, “I trust that the Russian immigrants in general do not deceive Finns”. Participants were instructed to rate each of the seven items from 1 = *completely different view* to 5 = *completely agree* ( $\alpha = .93$ ).

*Perceived Personal Discrimination* and *Perceived Group Discrimination* were measured with scale adapted from Berry, Phinney, Sam, and Vedder (2006). Three items (e.g., “I think that Russian immigrants have something against me because I’m Finnish”) measured perceived personal discrimination while the other three items (e.g., “I think that Russian immigrants don't accept Finns”) measured perceived group discrimination. The items were rated on a scale ranging from 1 =

*completely disagree* to 5 = *completely agree*. ( $\alpha = .81$  for perceived personal discrimination and  $\alpha = .81$  for perceived group discrimination)

*Intergroup Contact* was used as a control variable, alongside with age and gender, and was measured by a single item “In your everyday life, how much are you in contact with Russian immigrants or tourists?” Participants ranked their evaluation on a scale of 0 = *none* to 4 = *a lot*.

### ***Statistical Analysis***

A series of two-way ANOVAs controlling for intergroup contact, age, years of education, and gender were conducted to test the hypothesis about the interactive effect of objective and subjective diversity on perceived intergroup relations.

## **Results**

### ***Descriptive statistics***

The descriptive statistics of the variables used are presented in Table 1. These results show that, on a four-point scale, participants overall estimated low amounts of diversity in their neighbourhood. Although participants had, on average, quite rarely contact with Russian immigrants, their outgroup attitudes were on the positive side of the five-point scale, and they reported relatively high levels of outgroup trust. The average perceived personal discrimination rating was 1.76 (SD = .85) and the average perceived group discrimination rating was 2.30 (SD = .97). Participants’ perceptions of group discrimination were statistically significantly higher compared to personal discrimination ( $t(335) = 37.7, p = .000$ ). Table 1 also shows the bivariate correlations between the continuous variables. Intergroup contact was negatively associated with perceived personal discrimination and positively associated with subjective diversity and outgroup attitudes. However, perceived group discrimination was not correlated with intergroup contact. Outgroup trust was positively correlated with outgroup attitudes, while it was negatively correlated with both perceived personal and group discrimination. Younger people were found to have more intergroup contact. While age was not correlated with any of the dependent variables, years of education was positively correlated with attitudes towards Russian immigrants and outgroup trust, while it was negatively correlated with both perceived personal and group discrimination.

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Insert Tables 1-2 about here

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In Table 2, descriptive statistics are reported separately by each OD context. In average, participants living in low-diversity regions perceived the highest levels of diversity in their neighbourhood, followed by people living in high-diversity regions. Participants living in moderate-diversity regions perceived on average the lowest levels of diversity compared to the other two objective diversity contexts,  $F(2,330) = 4.153, p = .017$ . As regards our control variable, intergroup contact, participants living in regions characterized by moderate OD reported the lowest levels of intergroup contact, while people living in regions with low diversity reported the highest levels of contact,  $F(2,331) = 9.280, p = .000$ . These descriptive results show the discrepancies between objective regional diversity and subjective diversity in the neighbourhood, and bring forth how regional opportunities for intergroup contact do not necessarily turn into actual intergroup encounters. This speaks for the need to control for the independent effect of contact on the dependent variables.

### ***Hypothesis testing***

The results of the analyses testing the hypothesis of the study are presented in Tables 3a-d. There was no significant main or interaction effects of OD in the region and SD in the neighbourhood when predicting outgroup attitudes (see Table 3a) nor when predicting perceived personal discrimination (see Table 3b). However, when predicting perceived group discrimination, we found both a main effect of OD as well as a significant interaction between OD and SD (see Table 3c).

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Insert Tables 3a-c about here

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Insert Figure 1 about here

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Figure 1 shows that while participants from all three regional OD contexts who subjectively perceived no, low or some diversity in their neighbourhood reported quite low levels of perceived group discrimination. Participants living in moderate OD regions who perceived high SD in their neighbourhood reported the highest level of perceived group discrimination ( $M = 4.65$ ,  $SD = .67$ ), followed by high regional OD context ( $M = 2.94$ ,  $SD = .43$ ) and low regional OD context ( $M = 1.46$ ,  $SD = .55$ ).

Also when predicting outgroup trust (see Table 3d), a significant interaction between OD in the region and SD in the neighbourhood emerged, as well as quite a similar pattern of findings but in the opposite direction. In Figure 2, we can see that participants from all three OD contexts who subjectively perceived no, low or some diversity in their neighbourhood reported moderate levels of outgroup trust. However, people who lived in low OD contexts but perceived high SD reported the highest levels of outgroup trust ( $M = 4.31$ ,  $SD = .53$ ), and people living in moderate OD context but perceived high SD reported the lowest levels of outgroup trust ( $M = 2.04$ ,  $SD = .65$ ).

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Insert Table 3d about here

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Insert Figure 2 about here

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In sum, our hypothesis on the joint effect of OD and SD was confirmed when predicting perceived group discrimination and outgroup trust. Intergroup relations were perceived most negatively when objective diversity was moderate and subjective diversity was high. However, we found no such effect when predicting outgroup attitudes and perceived personal discrimination.



The analyses were also conducted without controlling for the effects of intergroup contact, and all the pattern of the findings remained the same. Next, we turn to discuss these findings.

## Discussion

In the current study, we aimed to provide evidence for the interactive effect of objective diversity in the region and subjective diversity in the neighbourhood on perceived intergroup relations, with a special focus on regions characterized by moderate levels of immigrant population. While we did not find the expected interaction effect of objective regional and subjective neighbourhood diversity on outgroup attitudes and perceived personal discrimination, there was a significant interaction effect on perceived group discrimination and outgroup trust. Participants who lived in moderate-diversity regions but subjectively perceived high levels of diversity in their neighbourhood reported the highest levels of perceived group discrimination and the lowest levels of outgroup trust. This finding specifies Putnam's (2007) theorization about the negative effects of high diversity by showing the negative effect of high *subjective* diversity, and bridges it to Hogg's (2000) notion about the negative ramifications of uncertainty, that may be evoked especially in contexts characterized by moderate diversity. Based on Allport (1954) and Schneider (2008), we argue that in contexts in which diversity has become clearly visible but not yet resulted in an established multicultural milieu, it is difficult not only to correctly estimate the actual number of immigrants but also to engage in positive intergroup interaction as compared to other contexts (see also Blau 1977 and Richard et al. 2004, for similar notions in organizational psychological literature). Therefore, in moderate level contexts, people may be more reserved and sensitive to negative intergroup encounters particularly when perceiving high levels or emerging cultural diversity in their immediate neighbourhood.

When predicting outgroup attitudes, we did not find evidence of main or interactive effects of objective diversity in the region, or of subjective diversity in the neighbourhood. This can be seen to contradict the big picture of previous findings on the effects of objective and subjective diversity. However, it should be kept in mind that also previous findings on the effects of diversity are somewhat mixed; while some studies on outgroup attitudes have found no evidence of a relationship between regional or national number of immigrants and anti-immigrant attitudes (Rustenbach 2010), others have found only subjective (and not objective) diversity to be associated

with outgroup attitudes (e.g. Semyonov et al. 2004) or have failed to find an interaction effect between the two (Hooghe and de Vroome 2015).

Further, we only found the expected interaction effect on perceived group, but not personal, discrimination. This is in line with previous research, which has typically found that people perceive their in-group to be targets of discrimination more often than they perceive discrimination themselves (Taylor et al. 1990). Perceptions of group discrimination might also be affected by secondary sources, such as media representations or discussions with in-group members, even if the person has not him- or herself witnessed situations in which in-group members have experienced discrimination. Thus, it is understandable that we find effects on perceived group (and not personal) discrimination especially in contexts where the consequences of diversity are difficult to estimate and intergroup contact is not that frequent. More research on the main and interactive effects of objective and subjective diversity on different proxies of intergroup relations is needed, and subsequent studies should also take into account the possibility of previously neglected non-linear relationships. Treating contexts as non-continuous, categorical in nature, may be of great importance to better understand intergroup dynamics in moderate diversity contexts.

### ***Limitations and future directions***

The main limitation of the present study relates to the use of cross-sectional survey data. Consequently, the proposed causal effects should be interpreted with caution, as it is possible that people with different attitudes and different levels of outgroup trust and perceived discrimination also differently evaluate the degree of diversity in their environment. In the future, experimental and longitudinal research is needed not only to examine the issues of causality but also to determine the role of various mediators and moderators, as well as the effects of increases and decreases in diversity over time (see also Hewstone 2015). This way, we could have new insights about the processes by which and circumstances in which objective and subjective diversity independently or jointly predict intergroup relations.

Second, it should be noted that in the current study, objective diversity was measured at the regional level and subjective diversity at the neighbourhood level. Even though this choice fitted the theoretical idea behind the study, the differing measures can also be viewed as a limitation. Namely, with these variables it was not possible to directly compare the effects of subjective and objective diversity at regional and neighbourhood levels. The results showed that there was a

mismatch between subjective and objective diversity. Besides the ambiguity characterizing moderate level diversity areas, we should acknowledge that there might be disproportionally large concentration of immigrants in some areas of residence within the larger area characterized by moderate diversity. If so, this might not only affect the estimates of diversity of those residing in those areas, but also have ramifications for perceived intergroup relations.

Also related to measurement, objective diversity was measured based on the ratio of all immigrants within the whole population, while the survey questionnaire used was focused on intergroup relations between majority Finns and Russian-speaking immigrants living in Finland. The reason for this is that there are no regional statistics available for each ethnic or linguistic group in Finland. However, based on previous research on attitude generalization, we expect that attitudes towards different immigrant groups are part of the same semantic network and hence correlated (see, e.g., Harwood et al. 2011). Thus, we expect the general number of immigrants in the region to predict intergroup relations largely similarly than the specific number of Russian-speaking immigrants in the region.

Third, the data used in this study was collected randomly in 18 counties in all six administrative regions of mainland Finland. Although there were enough participants to represent all these regions, the distribution of participants in each smaller county was far from being equal (for example; in Ostrobothnia county there were 3 participants while in Uusimaa county, there were 94). The small number of units and the unequal distribution of participants made it impossible to conduct multilevel analyses, which would have been required to exclude the effects of possible confounding factors such as urbanization, economic factors or levels of unemployment.

Last, the intergroup context in Finland can be considered as rather homogeneous and peaceful when compared to many other Western countries with considerably larger immigrant populations. This, in turn, might limit the generalizability of our findings. However, the hypothesis tested in this study was based on previous research on the effects of diversity (e.g. Hooghe and de Vroome 2015; Schneider 2008) and subjective uncertainty (Grieve and Hogg 1999; Hogg 2000) on intergroup relations. Thus, there is a reason to expect that the value of the present findings can be extended to other immigration contexts as well. Nevertheless, we call for future research that would test the effects of low, moderate and high objective and subjective diversity in different intergroup contexts that are characterized by different status relations and historical bonds between immigrants

and the national majority. It would also be valuable to focus on inter-minority relations and see how they are affected by the degree of objective and subjective diversity.

## **Conclusion**

The immigrant population in Europe is increasing rapidly each year. In our research, we wanted to shed light on the importance of different contexts when it comes to linking perceived outgroup size to perceived intergroup relations. While previous research on the effects of diversity on intergroup relations has limited its focus on either neighbourhood level or larger regional/country level, our contribution was to examine the joint effect of subjective diversity in the neighbourhood (i.e. proximal context) and objective diversity in the region (i.e. distal context). Our results point to the direction that a moderate level of objective diversity in the region is the most ambiguous and potentially most conflictual context. When moderate objective diversity in the region is combined with high subjective diversity in the neighbourhood, majority group members report lower levels of trust towards immigrants and perceive their in-group to be discriminated against. This idea is in line the theory of uncertainty avoidance: especially in changing intergroup settings, group members “actively strive to reduce uncertainty for themselves and their in-group (Hogg 2000). We suggest that future interventions should take into account the risk of heightened intergroup discord in moderate diversity contexts, and help alleviate the possible feelings of ambiguity and threat among the population that is only starting to adjust to hosting larger groups of immigrants. That way, also immigrants may feel more welcomed and comfortable in their new home.

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